REMARKS

Claims 1-12 are pending; claims 1-3, 11 and 12 have been amended herein. Claims 1, 11 and 12 have been amended for clarification purposes. The "(23)" reference has been deleted from claims 2 and 3. No new matter has been introduced.

The rejection of claims 1-10 as being indefinite under 35 USC § 112, second paragraph, are believed to have been overcome by the amendments to claim 1. As recited, "impellers" in claim 1 has been replaced by the singular "impeller."

The reference character "23" has been deleted since this is the exit angle. The angle of entry is recited on page 2, lines 21-23 of the specification. There is, however, no reference number in the drawings referring to the angle of entry.

The present invention (amended claim 1) relates to an apparatus for transporting a polymer dispersion, comprising an impeller, surrounded by a housing, or protruding freely into the polymer dispersion, said impeller having a shaft hub and a number of individual curved vanes freely mounted on the shaft hub to create pumping spaces on the front side and rear side of the curved vanes of the impeller. The pumping spaces are so formed as to move the polymer dispersion through the pumping spaces with a uniform flow. The apparatus may be driven by a drive.

Claims 1-3, 5-7, 9, 11 and 12 stand rejected as being anticipated by Weis (US 3,704,868).

Weis refers to a mechanical aerator for the aeration of a liquid having an impeller with a plurality of backward curved vanes. A mechanical aerator for the aeration of

liquid is an apparatus, which is different from an apparatus for transporting polymer dispersions.

The blades or vanes of the Weis apparatus are curved differently from those of the claims since the polymer dispersion of the claims is moved through the vanes, i.e., at nearly right angles to the vanes or almost parallel to the axis of rotation of the impellers. The flow direction caused by the vanes of Weis is radial from the axis of rotation of the impeller (col. 2, lines 8-11). Thus, there is no uniformity of the flow through the vanes from the front pumping space to the rear pumping space as required by the claims.

Claims 1-3, 5-8, 11 and 12 stand rejected as being anticipated by Jost (US 1,646,913).

Jost relates to an apparatus for mixing fluids of different densities. This apparatus differs from an apparatus for transporting a polymer dispersion, since in the context of the present invention a polymer dispersion has only one unitary density. Therefore claim 1 of the present invention is new compared to Jost.

Claims 1-3, 5-7 and 10-12 stand rejected as being anticipated by DiPlacido (US 3,390,004).

DiPlacido describes a centrifugal pump rotating sufficiently rapidly to emulsify rosin. Nothing is said about transporting a polymer dispersion. Therefore the subject matter for which protection is sought is new compared to DiPlacido.

Claim 4 is rejected as being unpatentable over Weis or Jost or DiPlacido in view

of Wissman (US 4,722,664).

Weis discloses an impeller with curved vanes. Nevertheless, there is no suggestion or motivation to modify a known impeller with straight vanes used for transporting polymer dispersions when knowing Weis, since Weis describes a mechanical aerator for the aeration of a liquid. In this aerator the liquid is discharged from the impeller (col. 3, line 62, and col. 4, line 36) in order to produce falling cascades (col. 3, line 61) and to impart maximum energy to the tank contents (col. 4, line 1). This is not desirable for the transport of polymer dispersions, because they are very shear-sensitive and have to be treated gently. Therefore there is no reasonable expectation of success when using an impeller of an aerator according to Weis for the transport of polymer dispersions.

In the apparatus as described by Jost, one of the many impellers (reference No. 52) is shown to have curved vanes (see figure 3). But this is only one of a number of differently shaped impellers. Jost gives no hint as to why the impeller with curved vanes should be especially adapted for transporting polymer dispersions, which have to be treated gently, so that the occurring material stress is relatively low.

DiPlacido describes a pump for emulsifying rosin. The pump has to be operated sufficiently fast for the emulsification. Therefore the impeller with curved vanes as shown in figure 4 is used for mixing the different components of an emulsion violently in order to produce the emulsion. Therefore the impeller as described by DiPlacido does not lead to the present invention, an object of which is to reduce the shear occurring

during the transportation of the polymer dispersion.

Wissman does not remedy these omissions in the primary references.

A favorable response by the examiner is solicited.

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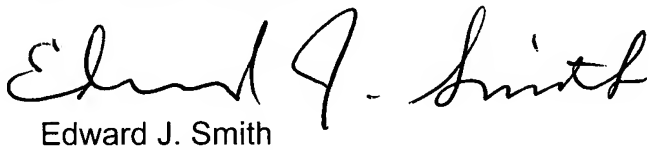
Respectfully submitted,
KEIL & WEINKAUF



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